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AUTHOR Heydinger, Richard B.
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ABSTRACT

A model for generating global scenarios for higher education is presented, and five global scenarios for the future of higher education in the United States are proposed. Multiple scenarios help to set the context in which planning occurs. They are similar to planning assumptions that many institutional research offices prepare as background information. However, instead of a single assumption for each variable, assumptions are forced to vary across a feasible set of alternatives. As a planning aid, this approach forces individuals to be integrative in their thinking and to recognize that the future is unpredictable. The sample scenarios were constructed from an input-process-external model. Direct inputs include: funds (research funds, state and local financial support, private sources, and student aid), facilities, enrollment, and faculty. Process factors include public policy regarding higher education, internal academic governance, and values of students. External factors include the following: economy, computation and communication, demand for research and instructional programs, societal reactions to higher education, competition from other segments of postsecondary education, and the regulatory climate. (SW)

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MULTIPLE SCENARIOS IN HIGHER EDUCATION

RICHARD B. HEYDINGER

ASSISTANT TO THE VICE PRESIDENT FOR ACADEMIC AFFAIRS

UNIVERSITY OF MINNESOTA

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THE ASSOCIATION FOR INSTITUTIONAL RESEARCH

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D. R. Coleman, Chairman
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MULTIPLE SCENARIOS IN HIGHER EDUCATION

Abstract

Multiple scenarios may be a valuable tool for setting the context in which planning takes place. As a planning aid, this approach forces individuals to be integrative in their thinking and to recognize that in fact the future is unpredictable. A model for generating global scenarios for higher education is presented and five global scenarios for the future of higher education in the United States are proposed.

MULTIPLE SCENARIOS IN HIGHER EDUCATION PLANNING

Historically, those responsible for a college or university's planning process have presented a picture of a predetermined future, with obstacles to be overcome and opportunities to be seized. Yet experience has shown that no such unique forecast can be relied upon. Obviously the future is unpredictable. This fact creates a dilemma for the strategic planner, who must plan with some understanding of future forces yet recognize the inadequacy of predicting the future. One intuitively obvious way out of this dilemma is to chart a number of possible futures (Zenter, 1982, p. 13).

The use of scenarios as an integral element of an organization's planning process is an outgrowth of this dilemma. As a corporate planning tool, scenarios became popular in the early 1970s when, as a result of the Arab oil embargo, the petroleum industry quickly recognized the "unpredictability" of the future (Zenter, 1978, p.1). At about the same time, the concept of scenarios came to the attention of the general public with the publication of the Limits to Growth which presented alternative projections for world resource consumption (Meadows and others, 1972).

The concept of a scenario is familiar to all of us. In its rudimentary form it is a "what-if" exercise through which we test the effectiveness of a particular strategy. For example, athletic coaches use a form of scenario whenever in a practice session they create game-like situations. Military strategists have used scenarios for many years to devise tactics and test the readiness of their weapon systems.

Scenarios of the future may take many different forms. A scenario may be a simple outline characterizing the possible range of assumptions for each of the factors which need to be taken into account when formulating a strategic plan. Or, these same factors may be described in a series of thirty-page essays, each of

which reads like a short story describing the environmental conditions in which the organization may find itself at some designated point in the future (Heydinger and Zenter, forthcoming). Most importantly, a good scenario integrates the many different factors which will influence the organization's future. Rather than present only a single factor such as an enrollment projection, a good scenario will have an internal logic and consistency that permits the reader (user/planner) to gain a holistic perspective on one possible future.

To assess the potential uses of multiple scenarios in higher education planning, it is important to understand their role in the planning process. Scenarios provide the context in which planning will take place. They are akin to the familiar "planning assumptions" which so many offices of institutional research prepare as background information for the planning instructions issued by the president or other chief planning officer. Yet instead of a single assumption for each variable, assumptions are forced to vary across a feasible set of alternatives. Specific assumptions, termed premises, are then woven into a scenario. Two, three, or four scenarios may be developed. These are then distributed as background information for the upcoming cycle of planning.

The receipt of multiple scenarios communicates to those doing the planning (e.g., department chairs, deans) that indeed the future is unpredictable. The formulation of a unit's strategic plan must take into account not only the most likely sequence of events but also improbable events which carry with them serious implications for the future of the unit. Multiple scenarios encourages this expanded form of thinking. In the lexicon of the strategic planner, a unit's plan may be assessed against any of the scenarios to test how "robust" it is. As a result, uncertainty is injected into the planning process; and the fundamental truth noted above is communicated to all: the future is unpredictable. However, this is not a reason to jettison all forms of planning. Instead we must strive to anticipate the

future. Consideration of the widest possible set of alternatives improves the likelihood that our colleges and universities will be prepared for that single future which ultimately will be called history.

With this brief introduction as background, the remainder of this paper presents some possible scenarios for the future of higher education in the United States through the year 2000. Hopefully, these five global scenarios will provoke discussion concerning the range of possible futures for higher education; ideally they will serve as a guide for generating institution specific scenarios which might be used in the readers' own institutional planning process.

This paper does not present a detailed discussion on the variety of methodologies which can be used to generate scenarios. Such discussion is available in other references (e.g., Heydinger and Zenter, forthcoming; MacNulty, 1977). In the section which follows, the model from which the scenarios were developed is presented. Subsequently the five scenarios are presented.

MODEL UTILIZED TO GENERATE THESE SCENARIOS

If scenarios are to be effective, they must have internal logic and consistency. To paraphrase one author, the glue which holds together scenarios is a mixture of probability and causality. There must be sufficient detail in a scenario for the reader to be able to trace the causality chain from the present to the future (Enzer, 1981, p. 471). Thus scenarios must be more than stories fabricated about the future. They should be built on an analysis of the current environment and a careful design of the range of possibilities for each factor which determines the future of the organization. The interdependency of these factors must be examined and then woven together to form a logical, consistent scenario.

These characteristics of effective scenarios require the creation of a conceptual model from which the anlaysis can be conducted. Although many models

of higher education could be formulated, these scenarios were constructed from a simple "input-process-output" model. As shown in Figure 1, there are a series of "inputs" from which higher education builds its future. In the terms of open systems theory, these inputs are then utilized by the organization according to the "process" factors noted. All of these factors are in turn influenced by a set of "environmental factors" external to the organization. In a dynamic setting such as higher education, the external, input, and process factors interact over time to determine the "outcomes" of the system (not shown in Figure 1 but represented by the scenarios).

As described above, a set of possible premises is developed for each variable. This can be done in a variety of ways. For example, Enzer's INTERAX model which simulates environmental trends and events for all of the world is built on expert opinion collected in a delphi format and updated annually (Enzer, 1981). Also, relevant literature on each factor can be reviewed and a composite of expert opinion can be formulated. Or similarly, experts on each factor can be interviewed and from them different premises can be garnered.

The premises outlined for each variable in this model have been generated as a result of a selective, not exhaustive, literature review and augmented with a small number of interviews. Further work in this area calls for a more comprehensive collection of data to assure that the salient premises for each factor have been taken into account. Space constraints do not permit a detailed description of each premise; however, to give a flavor for the level of analysis supporting each premise, Figure 2 contains descriptions for selected factors and their associated premises.

Working through this methodology has some important benefits. For example, the discipline of "integrative" thinking is forced on those responsible for creating the scenarios (usually planning staff and central officers). Typically, at

any one time we contemplate our future by focusing on a single factor (e.g., enrollment projections, level of research support, availability of financial aid). However, to create good scenarios forces us to consider the interaction of the many factors which influence the future. In so doing, cause and effect relationships emerge which heretofore may have been overlooked.

FIVE SCENARIOS FOR HIGHER EDUCATION

The remainder of this paper presents five distinct scenarios which might occur for higher education in the United States by the year 2000. These result from plausible combinations and interactions of the premises shown in Figure 1. Because one is examining a number of plausible outcomes, not only may the most likely trends and events be specified but also highly improbable outcomes can be contemplated. In this way we are expanding our thinking about the future and reducing the changes that we have not anticipated, at least some aspect of our admittedly unpredictable future.

From the variables and premises specified, there are over one million possible mathematical combinations. Some of these are not plausible in actuality. Yet even the five distinct scenarios shown here do not exhaust the possibilities. The selection of which scenarios to present is more art than science. This decision should be based on the scope of the planning and decision making process underway in the particular organization. Throughout the formulation of scenarios the creator(s) must keep the institution's needs constantly in view. Unless we understand the nature of the dialog between the planners (e.g., department chairs, deans) and the decision-making authorities (e.g., provost, president), the scenarios may miss the mark as effective aids to the planning process.

These scenarios are focused on a somewhat fictitious organization, for they speak to all of the postsecondary education in the United States. They would be

most useful for those formulating federal policy. Different premises and perhaps different variables would be required for use in a specific college or university. In the parlance of scenario writing, these are "global" scenarios, in contrast to organizational specific scenarios.

The first scenario is the "offical future." This concept is borrowed from the book, Seven Tomorrows (Hawken and others, 1982). As the authors note, as our dreams are translated into programs, plans, and expectations we create a single, collective view of the future. I believe higher education has created such a view for itself for the next twenty years. It comes about as a result of our own research and published reports. For example, Three Thousand Futures issued by the Carnegie Council on Policy Studies (1980) is a powerful force in shaping that single future which many of us see for higher education, here termed the Official Future.

The other scenarios are presented simply to articulate the availability of choices facing colleges, universities, and the society with regard to the future of higher education. The intention here is to explore the boundaries of these possibilities and not to advocate one over another. In reality, the future will not be any one of these scenarios. Instead it will be comprised of factors from each scenario as well as many unforeseen possibilities.

TOOLING AND RETOOLING
SCENARIO

Two characteristics drive this scenario. First, the fundamental shift from a manufacturing economy to one based on information processing and on services has continued. New businesses based on these growth segments of our society are formed, while many companies shrink as manufacturing increasingly moves to less developed nations. Rather than a boom or bust economy, it is boom AND bust with businesses in the information and service industries having more job openings than candidates while employees in the manufacturing industries experience high rates of unemployment. Moreover, needed job skills change at an ever quickening pace. Two, three or four career changes in a lifetime is not unusual.

The second driving force is the continued recognition by both industry and students that a college education is the best road to success. If you already have a degree but are seeking a new career, colleges and universities are still viewed as the best source for fundamental job skills. For recent high school graduates, a college degree will not guarantee you a job; however, without a degree you can be guaranteed of not having a job. With required job skills changing rapidly, people find it necessary to return to formal schooling, not only to update themselves in their current profession but to improve their marketability for possible career changes.

These trends have a number of important implications for colleges and universities. Because of those seeking to "retool" for a career change, the feared enrollment decline is mitigated. Overall, nationwide enrollment in colleges and universities falls only 1.5%. Yet the composition of the student body undergoes some fundamental and dramatic shifts. Rather than an enrollment graph which is spiked around the ages of 18-25, a graph of college and university students is now nearly rectangular across the ages of 18-45.

Increasingly students recognize that excellence in the classroom enhances the probability of landing a much sought-after position. This coupled with an increase in the proportion of older students translates into a learning environment in which the students are much more serious about their studies than was true in 1983. As a result students demand high quality instruction. The passive acceptance of poor teaching is a relic of the past, for students know that their marketability depends on high quality training with the latest equipment and techniques. Thus, law suits by students over the misrepresentation of a costly economic good has become commonplace. Faculty members are under increased pressure to offer stimulating and up-to-date classrom material. Because of the greater age span amongst students, there is a wide range of values

debated in classroom discussion. As a result classroom interaction has become more heated. The implicit view that the faculty member is somehow superior to the student (leftover from the old days of in loco parentis) has completely disappeared. Faculty who prize the value of the liberal arts find themselves in a smaller and smaller minority, as students focus almost exclusively on the need for vocational skills.

Finally, this scenario assumes that non-higher educational organizations will not enter the market to offer basic vocational training. Although there is fierce competition for the continuing education dollar, giving a person the wide set of skills necessary for a new career remains exclusively the responsibility of traditional colleges and universities.

The current traditionally aged college student wants to "tool-up" to enter the marketplace; the returning college graduate wants to take an already developed set of skills and "re-tool" so that she may take on a second, third, or even fourth career.

YOUTH REJECT SCHOOLING

Despite all efforts by both private and public sectors the United States continues to slip as an economic and industrial power. The economy continues a slow downward drift as structural unemployment remains in manufacturing and other heavy industry. Some industries continue to expand with job openings prevalent in selected high tech areas (i.e., biogenetics, chemical engineering, cyrogenies) as well as selected skilled trades (i.e., carpentry, electricians, landscape maintenance).

Generally, however, college graduates have an extremely difficult time locating a position which uses their full potential. Salaries for entry level white collar positions are often less than the comparable wage earned by an apprentice carpenter or electrician.

The expectations of a "micro-millenium" have generally been realized with computing and communications playing a significant role in people's personal and professional lives. There has been a veritable explosion of available hardware and software for every facet of activity imaginable. Entertainment and business software with varying levels of sophistication are found in every home and office.

These trends working in concert with each other have led to a situation of grave concern for educators. It is obvious that all but the most elite youth are rejecting (formal) education. There are few job openings which demand a college degree and in which one can expect to earn more than in an "8 to 5" manual labor position. Thus, there is little motivation to enroll in postsecondary education. Youth are outspoken in their criticism of the poor pedagogical technique used in all aspects of formal schooling whether it be the high school classroom or the college course. Today's youth have been weaned on a steady diet of fast paced information presented in short bursts. They are accustomed to instant feedback and have learned to handle inputs from a variety of stimulii simultaneously. The format of the college course which has changed little over the past century seems archaic to them.

The shifting focus of the 1970s and 80s from concern with professions to concern with avocations has continued. Today's population spends much more time on their hobbies and recreational activities than their counterparts in earlier generations. As a result, a large segment of today's population avoid positions which would infringe on their time away from the office. Finding a manageable and undemanding 8-5 position is a specific objective of many youth as well as older adults.

These societal trends are further exacerbated by the high cost of postsecondary education, which must be borne almost entirely by the family. The federal government has extricated itself completely from the financial aid business. For any but the wealthly who still view it as in their best interests to obtain a college degree, they must borrow a significant sum of money which will require many years to pay back.

With a sluggish economy and public reaction swinging against colleges and universities, higher education has slipped even further on the fiscal agenda of the states. Major research universities are being maintained but nothing more. Many non-selective state institutions have been closed or merged. The worst fears about the future of the non-selective private liberal arts colleges have come to pass; only a few have been able to find their niche in the marketplace. The selective private institutions with significant endowments are vital but not necessarily thriving.

Nearly all of today's students come from at least third generation college families. These students are slated to be in the traditional professions, executives in the major corporations, or entrepreneurs in their own business venture. As a result collegiate student bodies, in addition to being much smaller, are more homogeneous than any time in the last 30 years. Although there are an equal number of men and women enrolled in postsecondary education, the only racial diversity is a result of an increasing number of foreign students who have enrolled at all levels. Enrollment in all but a few professional programs has dropped precipitously so that there is concern over the growing shortage of advanced degree holders in needed specialities within education, industry, and government.

For those who have decided to enroll, their mood is an odd mixture of devotion to learning coupled with a smugness that belies the fact that meaningful careers most likely await each graduate. College students demand high quality instruction, for like their peers who have opted out of schooling, they too have been exposed to stimulating educational materials and live a fast-paced life style.

Faculty on campuses have a feeling of relief, for they know that for whatever reasons their careers in academe have been spared while many of their graduate school colleagues have been forced out. The mood is one of "minding the store" while waiting for better days ahead. The public's critical attitude toward formal schooling is so overwhelming that individual faculties do not attempt to tackle a societal problem of this magnitude. Instead, a spirit of elitism grows on the college campuses as both faculty and students see themselves creating distance between their own lives and those of the "commoners".

LONG TERM MALAISE

As the new millenium approaches, citizens of the United States are hoping for a change in the 25 years of slow but steady decline which has characterized their country's recent economic history. Only a few industrial components of the economy (i.e., communications, computing, biogenetics, and prepared foods) have grown significantly. Computing has become an important aspect of all businesses; however, due to cost and a slow economy it has not penetrated the personal household at the rate that many had projected. Overall the mood of the country is somber.

The revenue streams of federal and state governments have diminished in real terms over the past 15 years as the country has neither the will nor the resources to tax itself more heavily. With a slumping economy and an aging population, the demand for governmental social services is great. Governments have struggled to formulate innovative programs which would speak to the country's needs; however, nearly all of these have been blocked by competing interest groups. Inaction has marked the last twenty years of government with some exceptions. Higher education might be regarded as one of these exceptions.

As the country progressed through the 1980's, the long awaited enrollment decline did materialize, with full force! A number of factors worked together to cause this. Jobs for college graduates were scarce and did not pay significantly greater salaries than those for common help in the service industries. The long heralded advent of lifelong learning did not materialize. Most scholars of the subject have concluded that people are not as innately curious as the movement had unwittingly assumed in the 1970's. In the early 1980's higher education was unsure of its future. Yet uncharacteristically, it responded strategically and aggressively. During this period faculty governance associations viewed this realignment of campus power with a wait-and-see attitude. For a brief period, cautious optimism swept the campuses. Administrators assumed increasing authority to manage the affairs of their campus, while both federal and state officials called for needed reform at all levels of education as the best way to bolster a sagging American society. Yet with the economy remaining in a slump, not only were public funds to support innovations not forthcoming, but states found it necessary to continue to retrench public higher education. With renewed confidence in their managerial expertise and political acumen, many university presidents responded by organizing confrontations with state governments as a strategy for receiving necessary funds.

State governments reacted by intervening to decide which public campuses would be retained and which ones would be closed for needed cost savings. With the support of state coordinating boards, state governments moved with unusual dispatch to merge or close institutions. In response, faculties chose two courses of action, neither of which were effective. They either unionized quickly with the hopes that collective power would thwart these mergers and closures; or they lobbied vociferously on behalf of the autonomous university and the need for traditional academic values. Any possibility of programmatic change on campuses was impossible, for governance mechanisms were paralyzed, due to the threat which faculty perceived.

This circumstance did not go unnoticed by either industry or the larger public. Industry found it increasingly difficult to conduct business with higher education, as the institutions were mired down in internal political maneuvering or unionized bureaucracy. The public viewed most colleges and universities as reactionary to needed pedagogical change. Although the citizenry generally recognized the need for post-secondary education, they view the current structure as out-of-touch, not unlike the cloistered monastery which seems oblivious to the swirling environment in which it exists.

Those faculty who were seeking rewarding work and had other career options have left the academy. In part this has been caused by today's student who recognizes that education is a costly economic good and therefore demands high quality instruction with up-to-date equipment. As a result, faculty are under increasing pressure, a strain which many have decided not to tolerate. In some cases faculty have turned to their unions to protect them from student "demands".....some would term it harrassment.

Today higher education finds itself a shrunken image of its former self. Research universities continue to manage, although their laboratory facilities have eroded considerably. There is doubt as to whether they can ever return to their former stature. State colleges have been the most severely hit of public institutions. Although most remain open, a number have been closed or merged with local community colleges or private liberal arts colleges as a means of staying open. The morale of their faculties resembles the downtrodden spirit of public school teachers in the 1970's and 80's. Private liberal arts colleges have virtually disappeared. The more selective institutions do remain, assuming the same role that private boarding schools assumed relative to public high schools in the 1960's. Community colleges have continued to follow the same course throughout the last 30 years. Their flexibility has served them well. Although they too have been cut back, they continue to meet the needs of their community in a wide variety of ways. However, they too have been forced to step back from the high quality higher education mission which they had mapped out for themselves.

Like a patient with a long bout of a near fatal illness, there is the question of whether the former health of higher education will ever be restored.

A NEW INDUSTRY IS BORN

In this scenario, many of the hoped for changes in the economy and society take place, but from the perspective of higher education the results are nothing short of revolutionary. The economy regains some of its lost momentum as the fundamental move from manufacturing to post-industrial activities begins to shake down. However, the hoped for stability in economic growth does not come about; instead the economy is volatile, marked by spurts of growth followed by double digit inflation. As a result, the funds to support state and federal government programs continues to be an issue. The entrepreneurial spirit in the country continues to burgeon as both policy makers and individuals recognize that innovative activity holds the key to American's future success as a world leader. Both federal and local governmental policies are created to foster the creation of new businesses, with the hope that this will create long term and steady growth in the overall economy. The country's and indeed the world's focus continues to be on "high tech" industries with more and more of the manufacturing shifting to developing countries. The predicted revolution in computing and telecommunications has a far greater impact on business, education, and home life than all but the most far-fetched predictions of the 1980's had envisioned.

Although the last twenty years have been ones of rapid change and continual soul-searching regarding the future of the United States, the country's citizenry continues to recognize the fundamental importance of education. The possession of marketable skills is seen by all socio-economic classes as essential for economic success and self-fulfilling work. The focus is one of education for vocational success with decreasing emphasis placed on the education of the whole person. Given the rapid pace of change, people have come to expect that they will most likely have three, four or even five different careers in their working lifetime. Thus they have come to view formal education as an intermittent but essential activity throughout their lives. Because effective skill acquisition is so closely tied to employment possibilities, students have become very outspoken in their demand for high quality instruction. Because higher education takes place throughout one's life, the trade-off between income and cost of attending higher education is more obvious than any time in our history. It is now recognized that the single largest expenditure any individual makes is for education. Thus students have become careful and outspoken consumers of education.

During the period of the demographic downturn in traditional college-age students, both the federal government and nearly all states opted to let market mechanisms decide which institutions would thrive and which would fail. This was not surprising, for it was consistent with the entrepreneurial spirit of free enterprise which was sweeping the country. At the same time, however, public officials recognized the long term importance to the country of maintaining a viable post-secondary industry. Thus, students were

given adequate financial aid support to attend the institutions of their choice. Some states instituted taxing policies which taxed a family from the birth of a child so that funds would be available in the form of financial aid at whatever time a person decided to attend post-secondary education.

This entrepreneurial and management spirit also swept college and university campuses during the 1980's. As institutions felt increasingly threatened by the uncertainty of the future, the traditional norms of careful, sometimes lethargic academic governance mechanisms were replaced by a willingness to move rapidly to try out new organizational arrangements. Research universities led the charge in this arena as they rushed to establish private research corporations. Faculty members in high tech areas took action on the long held recognition that they were collections of entrepreneurs with highly marketable skills. In increasing numbers they moved to set up organizations which were outside the university. Strategic management became the accepted norm for higher education. This fundamental change in governance values accompanied by a worsening financial situation led some colleges at many major universities to break away from the parent organization and set up their own independent schools. This was supported by the financial aid policies of the state governments and the increasingly profitable research arrangements made with corporations. Thus the traditional, comprehensive research university began to break down; its structure was to be radically altered.

All of these trends led to a fundamental reorientation in society's outlook on postsecondary education: Skills, not degrees, were seen as the most important outcome of an education. Consumers of education wanted to be able to decide on their own what institution they would attend. With society continuing to recognize the importance of higher education and an entrepreneurial spirit sweeping the country, entrepreneurs recognized the possibility of establishing proprietary institutions. These ventures would not make large profits, but they were viewed as important and respected contributions to society. Hence, there was an explosion of new forms of post-secondary education. Collectives of faculty members set up small professionally oriented training programs. Private corporations established larger, more comprehensive programs. Even the single individual who was highly skilled and an effective teacher could hang out a shingle and offer education. This was made possible because employers looked to demonstrable skills for hiring. The development by ETS of the computer literacy test in 1983 marked the first of over 400 such general tests which were developed.

Thus a new industry was formed. It was definitely higher education in the traditional meaning of that phrase; however, the structure of the industry was significantly different than 20 years earlier. Major research universities had undergone the most radical restructuring. State colleges had diminished significantly in numbers as students opted to attend institutions which were less bureaucratic and more personable. Many less selective liberal art colleges closed, while the more selective ones maintained their clientele consisting primarily of traditional college-aged students from upper class families. Community colleges flourished as they were able to respond quickly to fill the niches of program demand not covered by others.

THE OFFICIAL FUTURE

The course which the United States imagined for itself in the early 1980's has been followed: high tech industries have continued to expand with renewed emphasis and support from all sectors of society, including higher education. Computation and communications has had a significant impact on all of society — with businesses, homes, and all of education feeling the impact of the "computer revolution." The manufacturing decline in the States has stablilized with heavy industry now only providing 13% of the nation's jobs. The economy, however, has been volatile, with periods of moderate growth followed by recessionary cycles. This has prevented long term capital investment which is necessary to embark on a period of sustained growth; however, many high tech sectors of the economy have been on a steady growth curve.

After much debate in the 1980's about the best approach for dealing with the enrollment decline in higher education, the federal government and most states either consciously or by default adopted a policy of letting the market determine which public institutions would thrive and which would fail. Although some had advocated a studied approach to determining which institutions should receive funding, the political stakes were too high to permit this type of managed approach. Instead, institutional funding was based on enrollment. Generally, the demand for higher educational programs followed the demographic trends of the traditional college-age population. Although "life-long" learning has offset a portion of the downturn, the part-time student population has not enrolled in numbers large enough to counteract the decline in the number of younger people. More than ever students realize that a college degree is the calling card to meaningful employment. Student interest is focused on those fields with career opportunities. With employment opportunities limited, each passing year witnesses students approaching their studies with even more seriousness than the previous year. Today students are outspoken in their demand for high quality instruction and up-to-date facilities.

In the past decade industry has established training and educational facilities at an unheard of pace. Today over 400 industries are accredited to offer MA's with 175 of these licensed by their home states to offer the BA degree. Competition from industry at the undergraduate level has had little influence on higher education; most of the students enrolling in industry-based BA programs are company employees who need only to complete at most a few semesters of coursework. However, specialized master's programs have become a significant alternative for the person seeking post-baccalaureate work. It is now obvious that higher education underestimated this potential market when it failed to set up programs for older, degree holding professionals who sought to

change careers. Because neither adequate flexibility nor high quality pedagogy was available, many older students turned to newly established proprietary programs.

Support for research programs has been good in selected high tech areas. Society's policy makers continue to recognize that the freedom offered by the university is the best environment in which to conduct basic research. Cooperative research organizations and jointly held patents between industry and higher education have become commonplace. Wtih this selective emphasis on academic programs, campuses can be divided into the groups of "have's and have-not's." High tech disciplines often occupy new facilities with nicely appointed offices while the remainder of faculty offices and classrooms are found in decrepit buildings. A simple drive around most campuses shows a "ghetto" neighborhood for the humanities and social sciences set beside a "high tech courtyard" with modern buildings and a manicured landscape. This mirrors society's recent fixation on high tech and its growing impatience with the "high arts."

Campus governance is a curious mixture of strategic management (utilized in developing high tech and business oriented programs) and traditional academic governance, (still used in the humanities and social science disciplines). Today academic administrators publicly recognize these differences which for so long were only subconsciously noted. The mood on campuses varies significantly depending on the discipline from which you hail. Policies for early retirements and buy-out options are commonplace in all institutions. However, except for minor changes to tenure regulations there has been few other changes in faculty personnel policies. Higher education's reluctance to deal with delicate matters of professional development stand in contrast to private industry which since the early 1980's has recognized this factor as a key components in the organization's strategic plan.

For higher education, the long dreaded period has reached its nadir. With the number of traditional college-age students steadily growing for at least the next sixteen years, a mood of optimism is returning to campuses. Today research universities are somewhat smaller than they were ten years ago, but they are still a much-valued part of society. State colleges and universities are diminished in number, with 1 of 10 being closed in the last 7 years and another 2 in 10 undergoing fundamental changes in their mission or structure. Some have merged with neighboring post-secondary institutions, both private and public. The number of liberal arts colleges is 75% of what it was in 1980. The more selective institutions have survived with few changes; for the less selective institutions which have survived, they have restructured their mission to find a market niche. Community colleges have capitalized on the continued growth in avocational interests with their flexibility permitting them to respond quickly to changing student and community needs.

FIGURE 1

INVENTORY OF POSSIBLE KEY FACTORS FOR SCENARIOS

DIRECT INPUTS TO HIGHER EDUCATION

A. Funds
   - Research
     1. Boom
     2. New Partnership
     3. Continual Decline
   - State and Local Financial Support
     1. Enrollment-based Funding
     2. Maintain the Industry
     3. Guided Shrinkage
   - Private Sources
     1. Continued Support
     2. Drastic Decline
   - Student Aid
     1. Restructuring of Sources
     2. Crisis in Aid

B. Facilities
   1. Replacement Schedule
   2. Gradual Erosion
   3. Selective Building

C. Enrollment
   1. Youth Reject Schooling
   2. Tooling and Retooling
   3. Avocational Focus

D. Faculty
   1. Brain Drain
   2. Stumbling Through
   3. Renewed Vigor

Premises taken from Seven Tomorrows

PROCESS FACTORS

A. Public Policy Regarding High Education
1. Market Mechanism
   2. Guided Shrinkage
   3. Diversity Maintained

B. Internal Academic Governance
   1. Traditional Academic Values Reasserted
   2. Collective Bargaining Takes Hold
   3. Management Values Emerge

C. Values of Enrolled Students
   1. Student Consumerism
   2. Concern for the Whole Person
   3. Higher Education as Low Priority

EXTERNAL FACTORS

A. Economy*
1. Conventional
   2. Volatile
   3. Decline
   4. Bust

B. Computation & Communication
   1. Steady Growth
   2. Explosion
   3. Two-Tiered Access

C. Program Demand
   1. All High Tech
   2. Selective Vocational Fields
   3. Natural Resource Crisis
   4. The Bastion of Culture

D. Societal Reaction to Higher Education
   1. Greatest Asset
   2. Out-of-touch
   3. Selective Appreciation

E. Competition From Other Segments of Postsecondary Education
   1. Little Change
   2. In-House Industrial Programs
   3. Proprietary Boom

F. Regulatory Climate
   1. Still Greater Regulation
   2. Reaganism Takes Hold

FIGURE 2

SELECTED KEY FACTORS WITH POSSIBLE PREMISES FOR EACH

ECONOMY*

Conventional - single digit inflation, slow to moderate growth
Volatile - sharp inflationary trends, growth followed by sharp reversals
Decline - stagnant with slow contraction
Bust - mini-boom accompanied by double digit inflation followed by collapse

COMPUTATION, COMMUNICATION, AND INFORMATION PROCESSING

Steady Growth - continual growth for both personal and professional use
Explosion - optimistic projections are low; significant influence on many aspects of life
Two Tier Access - only used by select segments of society; groups of "have's" and "have-not's" develop

DEMAND FOR RESEARCH AND INSTRUCTIONAL PROGRAMS

High Tech - support for all forms of high tech remains strong but non high tech fields are not seen as essential
Focused - emphasis is on a few select fields in the "high tech family" (e.g., biogenetics)
Natural Resource Crisis - due to unforeseen crises in natural resources, demand shifts quickly to these fields
Bastion of Culture - increasingly higher education is seen as outmoded; the academy is seen as the "archivist of culture"

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*Premises taken from Seven Tomorrows

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